IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPELLANT'S REPLY BRIEF

APPELLANT:	Klaus Herrmann	CONFIRMATION NO.: 6835
SERIAL NO.:	09/993,176	GROUP ART UNIT: 3737
FILED:	November 19, 2001	EXAMINER: William C. Jung
TITLE:	"METHOD AND APPARATUS FOR CHARACTERIZING A LOCATION AT AN EXAMINATION SUBJECT"	

Commissioner for Patents
P.O. Box 1450
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S I R:

In accordance with the provisions of 37 C.F.R. §1.41.41, Appellant herewith submits his Reply Brief to the Examiner's Answer dated June 28, 2005. In the Examiner's Answer dated June 28, 2005, the Examiner stated at page 2 of the Answer that Appellant's Main Brief does not contain a statement identifying related appeals and interferences. Such a statement, however, clearly appears at page 1 of Appellant's Main Brief, and therefore the Examiner is incorrect on this point.

The Examiner also stated that the rejection of claims 1-38 stand or fall together because Appellant's Main Brief does not include a statement that this grouping of claims does not stand or fall together. The Examiner cited 37 C.F.R.§1.192(c)(7), however that rule is no longer applicable and has been superceded by 37 C.F.R.§ 1.41.37, which does not require such a grouping of claims. Appellant's Main Brief, therefore, is in full compliance with all provisions of 37 C.F.R.§ 1.41.37.

At two locations in the Examiner's Answer, (page 3, and pages 6-7), the Examiner responded to arguments made by the Appellant regarding the teachings of the Yanof et al. disclosure. The first location, at page 3, contains a repetition of statements made by the Examiner during prosecution. Appellant responded to those statements by the Examiner at pages 7 and 8 of Appellant's Main Brief. As stated at that location of Appellant's Main Brief, Appellant acknowledged that the Yanof et al. reference explicitly states that the location of a surgical tool is guided to a target location by inserting a biopsy needle into a patient while the imaging device (CT or fluoroscope) provides feedback to generate the position of the surgical tool relative to the target location. As argued at pages 7 and 8 of Appellant's Main Brief, however, this statement does not respond to Appellant's argument that the Yanof et al. reference does not disclose providing a representation of the surgical instrument at any location in the operating room other than in the displayed image of the examination subject. Providing a representation of the medical instrument only in the displayed image does not correspond to the method step in claim 1 nor the apparatus element of claim 20 requiring characterizing a location at the subject, *that is physically at the subject and that is visible at the subject*, substantially corresponding to the location represented in the displayed image that is identified by a mark that has been made in the displayed image identifying the aforementioned location, that is to be characterized at the subject.

In the aforementioned portion at pages 6-7 of the Examiner's Answer, the Examiner stated (for the first time) that a physical marking of a subject is "inherently disclosed" in the Yanof et al. reference. The Examiner cited language at column 4, line 65 through column 5, line 2 of the Yanof et al. reference as disclosing a pointer

62, which the Examiner stated is "a light emitting diodes 80" (sic). The Examiner further stated the "light emitting diode pointer" is physically visible and a general use of a light-based pointer is to provide a visible target or marker that is pointed to a subject of interest. The Examiner also stated that "in an alternative interpretation," the surgical tool, which is being inserted into the subject, is a physical and visible marker itself on the subject once the surgical tool is inserted in the subject. Lastly, the Examiner stated the pointer or surgical tool 62 serves as a marker for position and orientation of the surgical tool in correlation to the CT scanner and the patient.

Appellant's response is as follows>

First, the diodes 80 disclosed in the passage of Yanof et al. cited by the Examiner do not *form* the pointer 62, but as explicitly stated in that passage are used only for monitoring the position of the surgical tool or pointer 62. It is explicitly stated that these diodes 80 are mounted in a fixed common known relationship to the surgical tool or pointer. Clearly, therefore, these diodes 80 do not form any type of visible image on the patient, nor are they capable of doing so. Moreover, the Examiner has apparently been influenced by first reading Appellant's disclosure, because there is no statement whatsoever in the Yanof et al. reference that the diodes 80 even emit visible light. Since the diodes 80 are merely intended to present a fixed and detectable set of points, detected by an array of receivers 82, it is only necessary that the light emitted by the diodes 80 be "visible to" the receivers 82. In fact, it is more likely than not that the light emitted by the diodes 80 will not be humanly perceptible, because such visible diodes arrayed around the operating area would only serve as a distraction for the surgeon and other operating personnel. It is

more likely that the diodes 80 emit in the infrared range and that the receivers 82 are able to detect light in the infrared range.

In any event, even if the diodes 80 are, without justification, assumed to emit humanly visible light, there is no indication whatsoever that the diodes 80 characterize or otherwise mark any location physically at the patient.

The Examiner's second point is that the surgical tool itself, once it is inserted in the subject, provides a physical and visible marker. Even if this interpretation is accepted, it still does not correspond to the language of independent claims 1 and 20 requiring that the location characterization unit characterize the location physically at the subject *substantially corresponding to the location in the image identified by the mark*. As argued at page 8 of Appellant's Main Brief, the paragraph bridging columns 6 and 7 at the Yanof et al. reference explicitly states that the x-ray beam of the fluoroscopic device has a center line that can be aligned with a target in the patient, and this paragraph further explicitly states that the surgical instrument is positioned on and inserted along the center line *while watching the volume display* in three-dimensional space, or the fluoroscopic display in two-dimensional space (emphasis added). Since this procedure takes place while the surgeon is merely watching the display, there is no guarantee that the surgical instrument will be precisely placed at a location substantially corresponding to the location represented in the image that is identified by the mark. Even if independent method claim 1 is extremely broadly interpreted so as to (allegedly) encompass manual performance of the "characterizing" step (step 1(d)), dependent claims 10 through 15 clearly preclude such an interpretation, since each of those dependent claims sets forth hardware or components for performing the "characterizing" step. Moreover,

independent apparatus claim 20, in its literal language, requires the location characterization unit to interact with the marking arrangement, thereby precluding any interpretation of claim 20 as encompassing a manual step.

As to the Examiner's last point noted above, Appellant does not agree that the pointer or surgical tool serves as a marker for position and orientation of the surgical tool in correlation to the CT scanner and the patient. As noted above, it is not the pointer or surgical tool that serves this purpose, but is in fact the diodes 80 and the array of receivers 82, as explicitly stated in the paragraph bridging columns 4 and 5 of Yanof et al. that serve for monitoring the position of the surgical tool or pointer 62. In fact, in column 4, lines 38-39, it is explicitly stated that the biopsy needle 62 is manually guided.

Appellant therefore respectfully submits that the Examiner's incorrect interpretation of the Yanof et al. reference precludes any of the rejections based on Yanof et al., either alone or in combination with other references, from being sustained.

Submitted by,

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CERTIFICATE OF MAILING

I hereby certify that an original and two copies of this correspondence are being deposited with the United States Postal Service as First Class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on August 15, 2005.

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